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AUTHOR Williams, Michael J.; And Others
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ABSTRACT

The course guide contained in this document was developed to provide industrial arts instructors with some understanding of emotional disturbances and remedial objectives which can be stressed with mainstreamed emotionally disturbed children through industrial arts activities. Major discussion centers on (1) laws, legislation, and regulations concerning special education; (2) the special child and his emotions; (3) teaching techniques at Wells Street School (Connecticut); (4) rehabilitation goals through industrial arts; (5) defense mechanisms of emotionally disturbed children; (6) an example of a pretest to allow the instructors to gain an understanding of the students and their knowledge levels; (7) project development, including description of the project method of assembly, tools and materials required, preparation, behavioral and remedial objectives, and diagrams; (8) tools and supply list; and (9) critique of the mainstreaming program at Wells Street School. A bibliography is appended. (TA)

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A CURRICULUM GUIDE FOR INDUSTRIAL ARTS ACTIVITIES FOR CHILDREN WITH EMOTIONAL PROBLEMS

By

Dr. Michael J. Williams
Mr. Kenneth Frost
Mr. Allan Tracy

June, 1976

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Division of Technology
Central Connecticut State College
New Britain, Connecticut

CE 008 409

TABLE OF CONTENTS

I. INTRODUCTION

II. LAWS, LEGISLATION AND REGULATIONS

III. THE SPECIAL CHILD AND HIS EMOTIONS

IV. TEACHING TECHNIQUES AT WELLS STREET SCHOOL

V. REHABILITATION GOALS THROUGH INDUSTRIAL ARTS

VI. DEFENSE MECHANISMS

VII. PRETEST

VIII. PROJECT DEVELOPMENT

IX. TOOL AND SUPPLY LIST

X. CRITIQUE

XI. BIBLIOGRAPHY A and B.

INTRODUCTION

This course guide has been developed for use with emotionally disturbed children in an industrial arts program at an elementary level. The children for whom the guide has been developed have difficulty functioning in a regular elementary school. There is a slowdown in their learning process which isolates them into slower groups. A ream of labels has been devised by noted psychiatrists and educators to classify these children. All the terms mean virtually the same thing; the child is not able to adjust and or succeed in regular classrooms with the rest of the class at their present level of achievement.

The child knows that he is having difficulty keeping pace with the rest of his classmates. He is able to understand that there is some barrier directly impeding his progress. To label the child further lowers his self image. The Emotionally disturbed child has felt failure time and time again in an elementary school environment. The instructor cannot give the attention that the special child needs without neglecting the majority of other children. These special children are trainable and should be given the help they need through rehabilitation programs. The students can be mainstreamed back to the public schools with the proper training. Praise and the building of confidence are the keys to begin progressive steps through academic levels. Through industrial arts activities, a child can readily feel achievement in a short period of time. By using [illegible], planning, and using tools in the manipulation of selected projects he can take pride in

time. He is building, planning, and using tools in the construction of selected projects he can take pride in finishing. His self esteem is bolstered through such activities. Feelings of competance and success is the reward for completing the project. Industrial arts activities offer many rehabilitation goals to these students. It brings the real world to one of fantacy and pride instead of failure. A strong foundation can be built for academic work through an established program of industrial arts activities. Also utlized are all of the skill building excercises known to help children with developmental lags. These projects develop sequencing, spatial relationships, form discrimination, shape discrimination, and many more discussed in detail in chapter eight.

II

Laws, Legislation, Regulations

Administrators and teachers must be aware of the various Federal and State Laws concerning special education. Every student is, by law, guaranteed an education.

Title 20 - Chapter 33 Education of the Handicapped, contains the general and permanent laws of the United States enacted during the ninety-second and ninety-third congress.

Section 1402(A) states: There shall be within the Office of Education, a bureau for the education and training of the handicapped which shall be the principal agency in the Office of Education for administering and carrying out programs and projects relating to the education and training of the handicapped, including programs and projects for the training of teachers of the handicapped and for research in such education and training.

The handicapped are defined in the following section. Section 1402(c) "Handicapped persons" defined. For the purposes of this section, the term "handicapped persons" means persons who are mentally retarted, hard of hearing, deaf, speech impaired, visually handicapped, emotionally disturbed, crippled, or in other ways health impaired and by reason thereof require special education programming and related services. (Pub. L.93-380, Title VI section 616 Aug. 21, 1974, 88 Stat. 584.) On November 29, 1975 the ninety-fourth congress passed Public Law 94-142. An act to amend the Education of the Handicapped Act to provide assistance to all Handicapped children, and for other purposes.

State of Connecticut Laws relating to special education.

Section 10-76a. CHILDREN REQURING SPECIAL EDUCATION, DEFINED. Whenever used in sections 10-76a to 10-76j inclusive, and 10-94a:

(a) "secretary" means the secretary of the board of education.

(b) "child" means any person under twenty-one years of age.

(c) An "exceptional child" means a child who deviates either intellectually, physically, socially or emotionally so markedly from normally expected growth and development patterns that he is or will be unable to progress effectively in a regular school program and needs a special class, special instruction or special services.

(d) "Special education" means special classes, programs or services designed to meet the educational needs of exceptional children in accordance with the regulations of the secretary, subject to approval by the state board of education.

(e) "Children requring special education" includes any exceptional child who is (1) mentally retarted, physically handicapped, socially and emotionally maladjusted, neurologically impaired, or suffering an identifiable learning disability which impedes his rate of development, which disability is amenable to correction or which rate of development may be improved by special education, or (2) has extraordinary learning ability or outstanding talent in the creative arts the development of which requires programs or services beyond the level of those ordinarily provided in regular school programs but which may be provided through special education as part of the public school program.

(f) A"mentally retarded child" means one who, by reason of retarted mental development, is not capable of profiting from the educational programs of the public schools established for the normal child, but shall not include any child who requires custodial care, or does not have clean bodily habits, responsiveness to directions or means of intelligible communication; an "educable" mentally retarded child means one,who at maturity, cannot be excepted to attain a level of intellectual functioning greater than that commonly expected from a child of twelve years of age but who can be expected to attain a level of intellectual functioning greater than that of a seven-year-old child. A "trainable" mentally retarted child means one who, at maturity, cannot be expected to attain an intellectual functioning greater than that commonly expected of a seven-year-old child and who, for entrance into a public school special program, can walk, has clean bodily habits and is responsive to simple direction.

(g) A "physically handicapped child" is one who because of some physical handicap, as defined in regulations of the state board of education, requires special educational programs or services.

(h) A "socially and emotionally maladjusted child" or "neurologically impaired child" is one who is incapable of fully profitting from the general educational programs of the public schools because of some serious social or emotional handicap or an impairment of the nervous system, respectively, as defined by regulation by the state board of education, but who is expected to profit from special education.

(i) "School age children" are those who have attained the age at which the town commence to provide educational opportunities pursuant to section 10-186.

(j) "Learning disabilities", "extraordinary learning ability" and "outstanding creative talent" shall be defined by the secretary, subject to the approval of the state board of education, after consideration by him of the opinions of appropriate specialists and of the normal range of ability and rate progress of children in the Connecticut public schools.

SECTION 10-76b. STATE SUPERVISION. REGULATIONS. COORDINATING AGENCY.

(a) The state board of education shall provide for the development and supervision of the educational programs and services for children requring special education and may regulate curriculum, conditions of instruction, physical facilities and equipment, class composition and size, admission of students and the requirements respectint necessary special services and instruction to be provided by town and regional boards of education. Said board shall supervise the educational aspects of the training of all children requiring special education who are residing in or attending any child-caring institutions receiving money from the state and shall adopt and enforce regulations concerning requirements for special educational programs and accommodations for such children in such institutions.

THE SPECIAL CHILD and HIS EMOTIONS

Emotional problems in children are generally based on "trauma" such as; injury to the brain or body, divorce of the parents, death in the family, school entrance, puberty, social rejection, lack of love or family closeness. Everything that is recieved by our senses stimulates an emotional response directly or indirectly. A young child is more vulnerable to emotional problems because of his lack of knowledge, experience level and strength or lack of family relationships. So many factors contribute to emotional response that it is difficult to define emotion. As each situation changes the degree of response differs.

Emotionally disturbed children do not have the flexability to cope with everyday stress experiences. Their behavioral response may be locked to such an extent that no emotion is outwardly displayed in response to a variety of situations. Conversely a child can become extremely emotional to almost any stimulus such as in hyperactivity. The extremes in emotional response such as; passiveness, aggression, depression, hyperactivity and withdrawl are unhealthy patterns of behavior and must be rechanneled through rehabilitation programs to offer the child success in the regular classroom.

Emotional handicaps can best be demonstrated by one or more of the following characteristics to a marked

extent and over a period of time.

1. An inability to learn which cannot be explained by intellectual, sensory or health factors.
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers. (An inability to express warmth and sympathy toward others, to have close friends, to enjoy working and playing with others as well as ones self).
3. Inappropriate types of behavior or feelings under normal conditions.
4. A general pervasive mood of unhappiness or depression.
5. A tendency to develop physical symptoms, pains or fears associated with personal or school problems.

SOME DETERMINENTS of EMOTIONAL BEHAVIOR

1. Constitutional Make up

   Patterns of reactivity, expression and control are all influenced by the individual's temperment, mood cycles, activity levels, sensitivity, vigor and other constitutional reaction tendencies.

2. Early Training

   Early teaching, models, rewards and punishment foster certain emotions and discourage others. They also induce particular patterns of expression and control. If the child learns to deny and be ashamed of certain emotions he has unrealistic expectations and is

handicapped in learning to cope with such emotions.

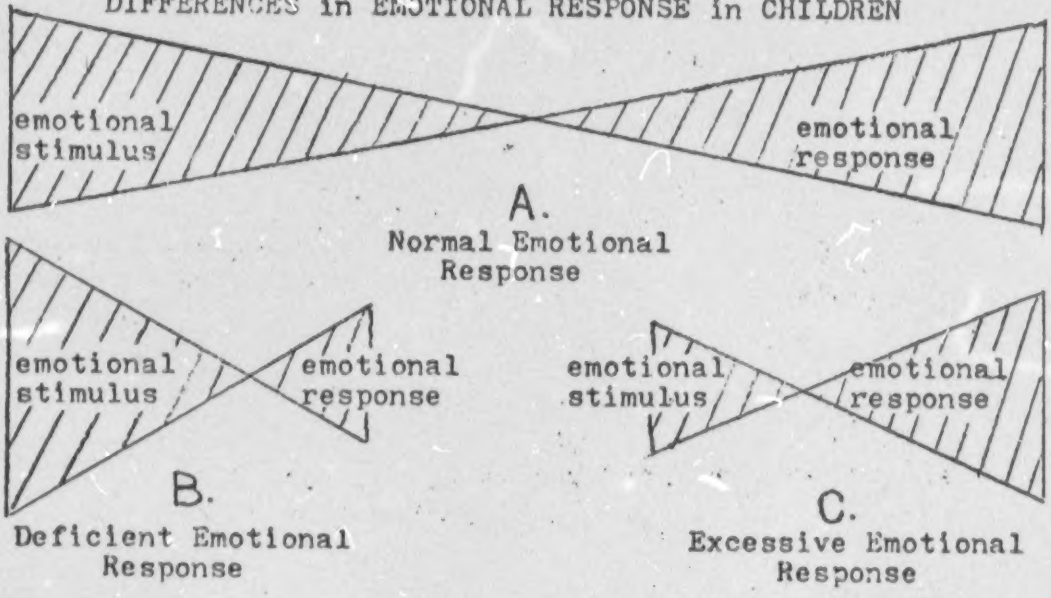
3. Frame of Refrence

An individuals picture of the world and of himself determines whether he experiences predominently positive or negative emotions. This frame of refrence also determines what events will be seen as significant and hence will arouse emotion.

4. The Social Field

Both the arousal of our emotions and the channeling of our emotions once aroused depend partly on the expectations and values of those around us. Their emotional reactions, especially in a dangerous or unstable situation may also influence our reactions.

DIFFERENCES in EMOTIONAL RESPONSE in CHILDREN



Children in these last two catagories need special help.

Outline of the Teaching Techniques Applied to Emotionally Disturbed Children at Wells Street School New Britain, Connecticut

The director of the program at the school uses a behavior modification technique with the emotionally disturbed children. The students are treated as individuals, responsible for their own actions and praised through social reward. The following is a description of everyday events and expectations established using this particular teaching technique;

1. The Circle (This is the outstanding aspect of the technique. It allows instructors and students to be on the same level of conversation, contact, participation and influence. Social reward is encouraged for active contributions. The child does agree to demonstrate acceptable behavior in the circle).

A. The instructor beginning the circle acknowledges everyone present by saying hello and the name of the person to which he is speaking. He is looking for eye contact and attention to the speaker.

B. The circle is used for instruction, to describe the events of the day, to express feelings openly and offer a realistic approach to the days events.

C. The child is openly rewarded for particapated behavior by applause. His telling of an event or contributing to the discussion also is expressed by applause.

D. Agreements for positive behavior are made in the circle by each individual. The child agrees to show acceptable behavior and no deviant responses are tolerated or the child must move out of the circle and be isolated from the group. He is now not welcome to participate in the group activities. The child must ask permission to return to the circle. He states what got him out of the group and a vote is taken to accept or not to accept him back to the circle. The acceptance or the welcoming back of a student is again applauded. The clapping builds a positive self image in the child for he is now where he wants to be socially. He is accepted to the group.

E. All activities; arithmatic, writting, language, industrial arts, playand specials such as; swimming and gym use the dicipline of the circle. Agreements are made for all conduct whether in the actual circle or not. This technique has brought a marked improvement in the emotional stability of the children.

F. The children work mostly individually setting their own pace. A one to one relationship exists between teachers and students. This is an ideal learning situation where the children can progress rapidly through the program with a great deal of success.

Rehabilitation Goals Through Industrial Arts

The Industrial Arts program at Wells Street School has been in existance since January 1975. In January 1976 the program to complete a curriculum guide on emotional disturbance was introduced. The previous program informed the students on basic hand tool usage and proper safety procedures. Projects were developed to incorporate specific rehabilitation objectives which was the common goal throughout the year. The outstanding effort was to build a positive self image in the children through a successful building activity using tools and materials.

To strengthen a child's emotional stability in an industrial arts area these factors must be exercised:

1. An honest, sincere approach toward instruction.
2. Guide the student over problem areas of construction keeping in mind the child's frustration level.
3. Praise for successful work.
4. Let the child work on his own as much as possible. This idea seemed to decrease tension in the student as the instructor was not overbearing by his presense.
5. The child is responsible for his own actions in the shop area.
6. The child is responsible to use tools correctly and safely.

7. The child has a cleanup job to perform and is responsible to himself and others for its completion.
8. To let the child know the instructors do care about their progress.
9. To encourage creativity and instill a sense of confidence in the student.
10. Give the students a variety of materials and tools to work with. This will stregthen the childs ability to handle task orientated situations.
11. Allow students to socially and physically interact with peers and teachers.
12. Encourage questioning while giving lessons and demonstrations.
13. Regulate instruction to the students attention span and frustration levels.

Defense Mechanisms

Defense mechanisms is another technique the emotionally disturbed child uses to keep his emotions hidden or out of awareness. They are not designed to have an effect on or evoke a response from others, although they may do so indirectly. They are also not employed to change a situation but to distort it or the threatening emotion it evckes.

Repression

This is the process of preventing a troubling thought and the discomforting emotion it would evoke from coming into awareness. Repression enables the emotionally disturbed child to avoid thinking about his problems. It also enables him to forget some of his responsibilities. Repression is a pain softening type of organized forgetting at a sub-conscience level. The emotionally disturbed child overuses this mechanism which impedes his educational progress.

Denial

The child will deny or distort reality from threatening ideas or emotions. Students may believe they cannot succeed and therefore deny their accomplishments.

Reaction Formation

The child protects himself from dangerous situations not only by repressing his feelings but developing conscious attitudes and behavior patterns directly

opposed to such feelings. He may conceal hate with a facade of love, cruelty with kindness or sadness with outbursts of laughter. These new feelings help the individual to keep his real but dangerous desires from entering consciousness or being carried out in action.

Displacement

Displacement is the process of experiencing and acting out emotions, not in the situations which endanger them but in unrelated situations. A child may express aggression not toward the object of his anger but to another source such as, a weaker child.

Rationalization

In this defense mechanism one can justify behavior by imputing logical or admirable motivation to it. The child can defend himself from an emotional threat by this deception technique for he accepts reasons for his behavior which are not true.

Projection

This is a reaction in which we blame others for our own mistakes. Putting the blame on others helps to aviod disapproval and punishment.

Fantacy

The child would picture things as he would like them to be. He can escape from reality and the stresses of everyday life.

VII

Pre-test

School: Wells Street School Subject: I.A. Hand tools

I. Main Goal: to allow the instructors to gain an understanding of the students, and their knowledge levels.

II. Objective: Given a demonstration and introduction of hand tools the students will become interested in the tools and stimulated to the extent of wanting to go into the I.A. shop.

III. Content: Displayed on a table will be the following tools;

1. hammer
2. screwdriver
3. bit brace
4. c-clamp
5. ruler
6. coping saw
7. crosscut saw
8. pliers
9. file
10. sandpaper
11. tri-square
12. glue

IV. Procedures: (1) hold up each tool and ask students to name it. (2) then ask students to identify its use. (3) ask students if they can spell it. (4) place correctly spelled tools on blackboard. (5) once the tools have been identified remove them from the table. (6) pass out a piece of paper and with the aid of the words spelled on the board hold up each tool and have the students write down what they think the tool is.

VV. Summary:
1. Review tools
2. Discuss function
3. Talk safety

VI. Application:
1. Students will be able to name and list 6 out of 12 tools.
2. Students will be introduced to the useage of all 12 tools.

VIII

Project #1

Heart

Description of Project:

The heart is a simply shaped project that the students will easily accomplish in one sitting. It is outlined on a piece of masonite 6"x 6" and then cut to shape. With the ease of completion, this project should turn on the students to Industrial Arts. The main purpose of this project is to introduce the coping saw, rasp, file, and 120 grit sand paper.

Method of Assembly:

1. With a template of a heart, trace the shape out on a piece of masonite.
2. Using a C-clamp, clamp the masonite to the workbench.
3. Using a coping saw cut the heart shape from the piece of masonite.
4. Next, with a file or rasp smooth the edges that were left uneven by the coping saw.
5. With a piece of 120 grit sandpaper smooth all surfaces.
6. If desired, finish surface with paint.
7. Using a pencil or marker initial project.

Tools and Materials Required:

1. 6"x 6" piece of 1/8" thick masonite.
2. Heart template
3. Coping saw
4. File and/or rasp
5. Sandpaper 120 grit
6. C-clamp
7. Pencil, magic-marker, and paint

Heart- continued.

Preparation:

1. Make template
2. Make prototype
3. Precut 6"x 6" squares from masonite
4. Set up work benches
5. Introduction of project, materials, and tools.
6. Directions to follow written on blackboard

Behavioral Objectives:

1. Upon completion of this project the student will have used a coping saw, a file, and sandpaper,and when the student is asked to identify each will do so correctly.

2. Given the proper method of using the coping saw the student will successfully manipulate the saw so as to cut a piece of masonite.

3. After completing the heart project the student will be able to correctly use a file.

4. Upon completing this project the student will be able to correctly use 120 grit sandpaper.

5. Upon completion of this project the student will be able to trace a template.

Remedial Objectives:

1. As a result of tracing the template the student will be developing the following sensory-motor skills:

   a. tactile discrimination
   b. auditory discrimination
   c. visual discrimination
   d. following directions
   e. shape recognition

2. As a result of completing this project and recieving praise for his accomplishment the student will become encouraged and sense a worth to his exsistance.

3. As a result of being successful at this project the student will gain self-respect and confidence in himself.

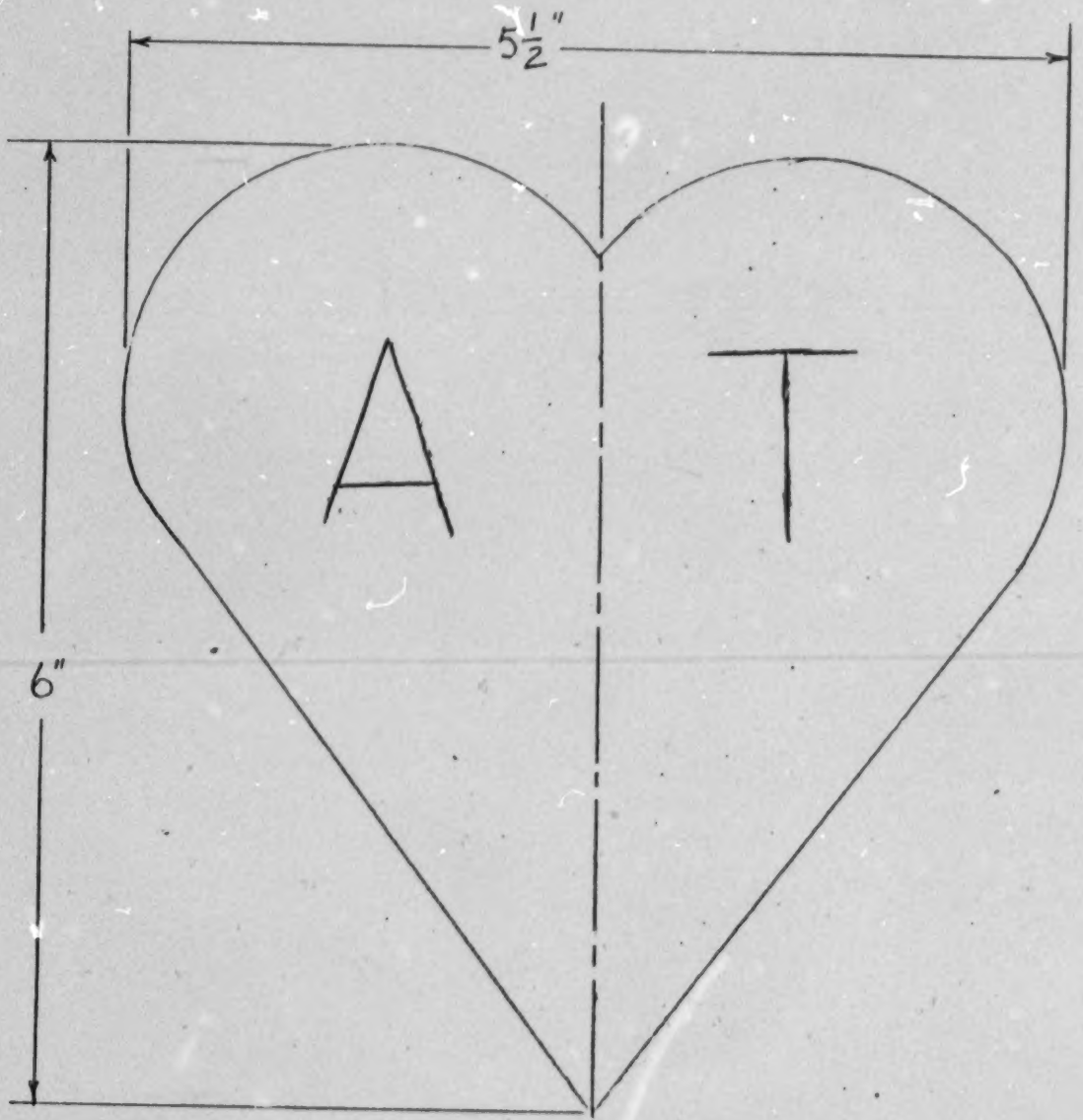
4. As a result of this project the student will be increasing his vocabulary.

5. As a result of this project the students will be developing eye-hand cordination through the manipulation of the various tools.

6. While working on this project the student will have to communicate with the instructor as to his choice of finish. This is developing his color and form discrimination along with his listening and thinking skills.

7. As a result of a successful experience with the completion of this project the student will be motivated into more learning experiences that are to follow.

PROJECT #1



SCALE 1" = 1"

HEART PROJECT 23

Project #2

Birdhouse

Description of Project:

The birdhouse project is made from nine pieces of material, so all that is required of the student is to assembly. The main purpose of this project is to introduce to the student how to properly hammer and nail. It is designed for success to continue to reinforce the positive learning experience.

Method of Assembly:

1. Using a hammer and nail fasten the front and back pieces to the bottom section.
2. Nail the side pieces into place
3. Fasten roof sections leaving ¼" overhang on rear
4. Attach dowel to front
5. Nail hanging brace onto back section
6. Sand all surfaces smooth
7. Paint is optional

Tools and Materials Required:

1. One piece 3/4"x4"x4" pine (for base)
2. Two pieces 3/4"x 4"x6" pine (front and back)
3. Two pieces 1/8"x 4"x5½" plywood (side)
4. Two pieces 4"x6½" clapboard (top)
5. One dowel 1/4" three inches long
6. Nails four six penny
7. Brads twelve 1¼" long ,eighteen 3/4" long
8. One 1¼"x 8" strip (holding bracket)
9. Hammer

Birdhouse continued.

10. Sandpaper 120 grit, 80 grit

11. Paint

Preparation:

1. Precut all pieces into correct sizes

2. Drill holes for enterance of birds

3. Drill holes for prech

4. Set up work benches

5. Introduction of project, hammer, and nails

Behavioral Objectives:

1. Upon completion of this project the student will have used a hammer, brads, and nails, and will be able to correctly identify each.

2. Given the proper technique for holding the hammer the student will demonstrate the proper method in his construction of the birdhouse.

3. Given two different types of sandpaper the student will correctly identify each.

4. Upon completion of this project the student will, when given a paint brush and paint, be able to paint a project.

Remedial Objectives:

1. Completion of this project will continue to increase the confidence of the student in his ability to be a successful individual.

2. As a result of this project the student is building the following sensory-motor skills;

a. eye-hand coordination

b. sequencing

c. visual discrimination

d. following directions

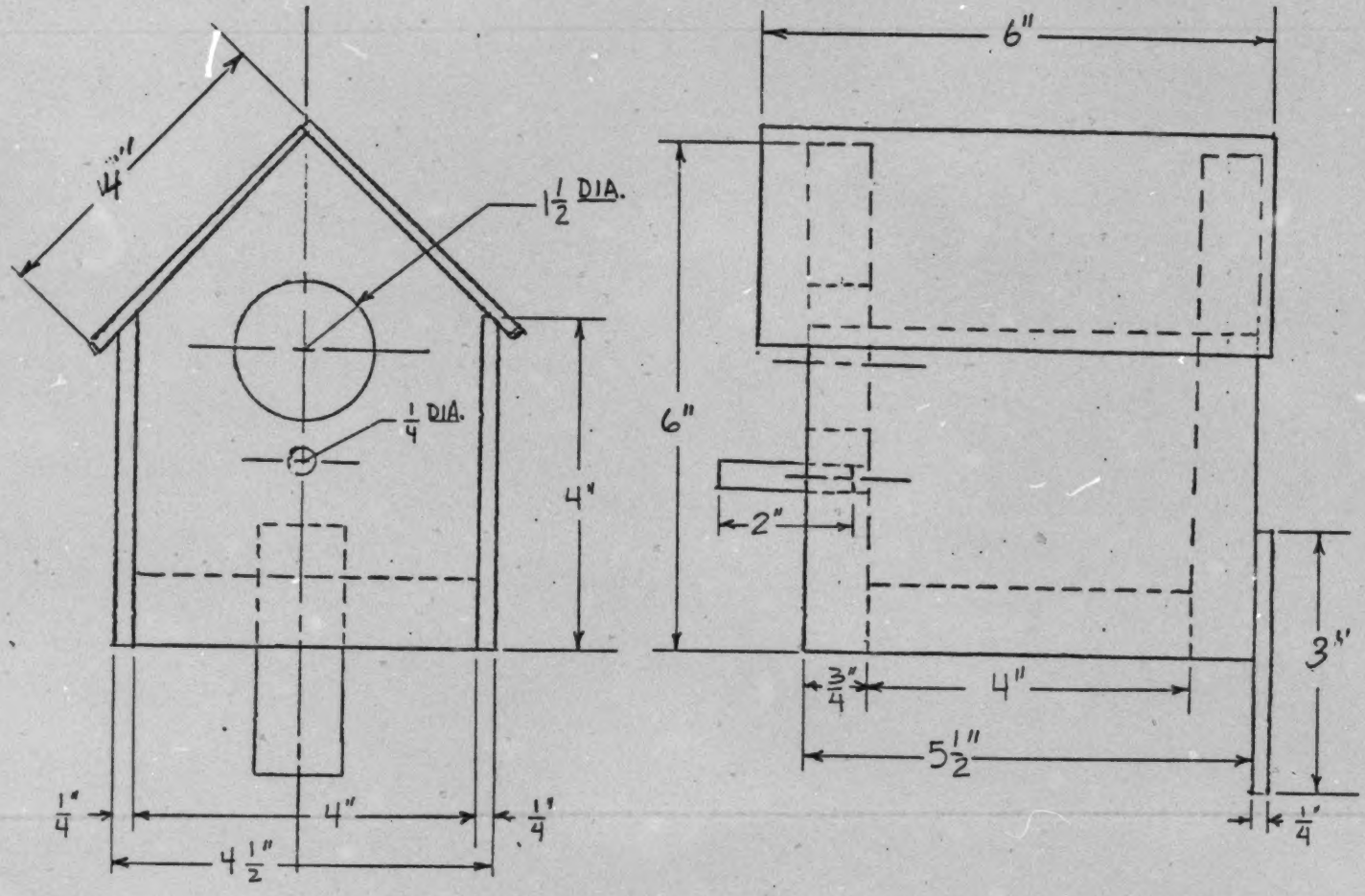
e. part-whole relationships

3. As a result of this project and continual support of the students actions, showing acceptance, praising him when approiate, and encouraging him to be more independent, the student will develop a more confident feeling about himself.

4. As a result of this project the childs self-esteem will be built upon by identiying his strengths and weeknesses and in a nonthreatening way pointing them out to him.

5. Successfully completing this project will result for those hyperactive students in a rewarding experience and aid in the students development of learning to learn.

PROJECT #2



SCALE ½" = 1"

BIRDHOUSE

Project #3

Car

Description of Project:

This project is the building of a car. It is made with two pieces of three quarter inch pine glued together and shaped, holes drilled to allow dowels to pass through, and wheels attached to the dowels. The main purpose of this project is to introduce to the students drilling methods and glueing procedures.

Method of Assembly:

1. Using a template of a car trace onto two pieces of pine the shape of the car
2. With a coping saw and C-clamp cut the shape of the car from the pieces of pine.
3. File off rough edges using either a file, rasp, or sandpaper.
4. Sand surfaces of car.
5. Glue two pieces of car together and fasten with brads.
6. Mark with a pencil where holes will be drill for dowles.
7. Using a nail as an awl mark spot where to drill.
8. Using a bit brace drill holes.
9. Check holes for dowel clearence.
10. Fasten wheels to one side dowels with brads.
11. Place wheels that are attached to dowels through drilled holes in car.
12. Fasten remaining wheels to dowels and take car out for a spin.

Tools and Materials Required:

1. Car template with center holes to allow for wheels.
2. 3/4"x 2"x 3 3/4" pine (two pieces)
3. 1/8" dowel 2¼" long (two pieces)
4. 1" diameter wheels (four pieces cut from 1" dowel)
5. C-clamp
6. Coping saw
7. Pencil
8. File, Rasp, and Sandpaper
9. Nail (to be used as awl)
10. Brads 3/4"
11. Glue
12. Hammers
13. Bit Brace
14. Drill Bits

Preparation:

1. Construct template
2. Precut all pieces of materials
3. Set up work benches
4. Introduction of project, drills, bit brace, and glueing
5. Construct Prototype

Behavioral Objectives:

1. Upon completion of this project the student will have used a bit brace, drill bit, and glue and when questioned will be able to identify each correctly.

2. Given the proper method as to glueing the student will glue two pieces of 3/4 inch pine together.

3. As a student works on his project he will correctly

demonstrate the proper use of a bit brace by successfully drilling two holes in his projcet.

4. Upon completion of the project the student will be able to descriminate between a non-clearence fit and a clearence fit, because the students holes must allow for a dowel to fit through.

Remedial Objectives:

1. The student's eye-hand coordination will be developed in this experience by his continuing involvment with tools.

2. As a result of this project the students following sensory-motor skills will be developed.

a. visual memory

b. visual discrimination

c. part-whole relationships

d. tactile and kinesthetic activities

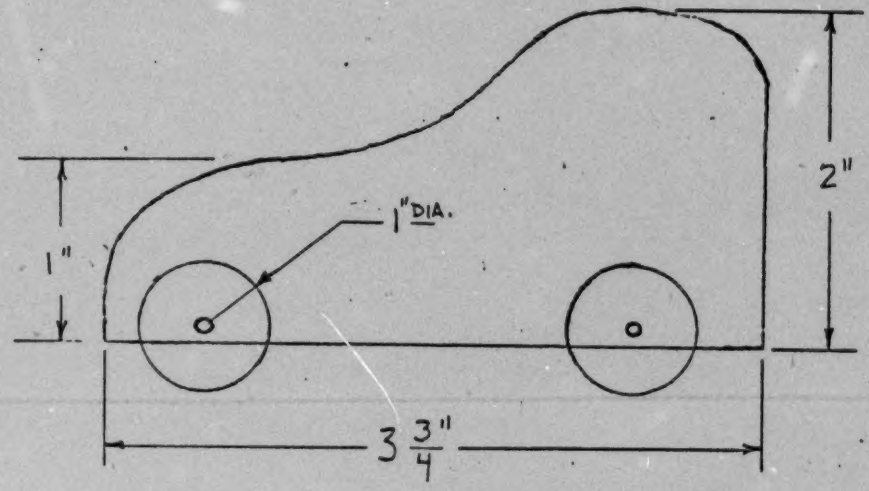
3. As a result of this project the student will develop a greater ability to verbally express himself by the teacher continually questioning him as to his progress.

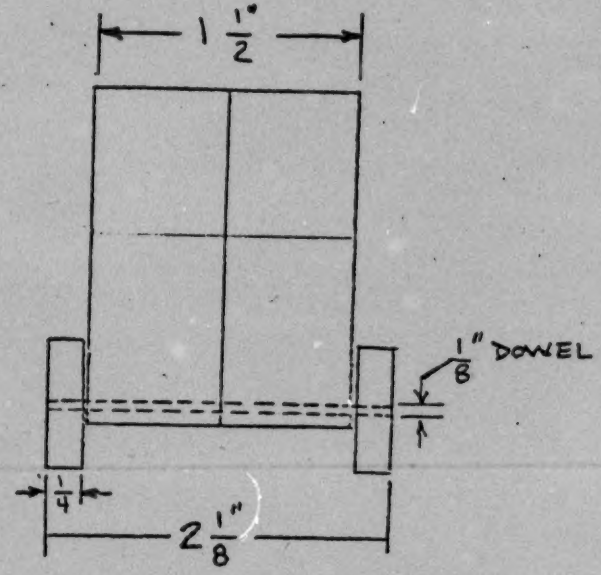
4. As a result of this project the teacher will be able to stimulate the childs imagination and encourage dreaming by role-playing with the student as a passenger in his car.

5. As a result of this project the teacher will be able to teach the student to accept his frustrations and try to deal with them correctly, by explaining to the student when he comes to a difficult area that frustration is something we all go through and that by continual effort we will succeed.

PROJECT #3

ROUND AND SMOOTH
ALL SURFACES





SCALE 1" = 1"

Project #4

Boat

Description of Project:

The boat project is made of ½"pine pieces placed on top of each other to form a boat. The main purpose of this project is to develop the students creativity by allowing each student to design his own boat. Instructors will be looking for proper use of tools and materials by the students. Review of tools that the students are having problems with be given at this time.

Method of Assembly:

1. Construct a hull from a ½"piece of pine.
2. Shape it with a coping saw
3. Smooth all rough edges with file, rasp, and/or sandpaper
4. Construct first deck from a ½"piece of pine
5. Shape and smooth surfaces
6. Using glue, brads, and hammer fasten together.
7. Construct second and/or thrid levels same as above
8. Finish with coat of paint

Tools and Materials Required:

1. One piece of pine ½"x 4"x 10"
2. One piece of pine ½"x 3"x 7"
3. One piece of pine ½"x 2"x 6"
4. Extra pieces of scrap pine
5. Coping saw
6. Hammer
7. Glue
8. Brads

9. Sandpaper

10. File

11. Paint

Preparation:

1. Construct template

2. Precut all pieces

3. Make prototype

4. Set up work benches

5. Introduction of project, discuss creativity

Behavioral Objectives:

1. Upon completion of this project the student will have shown that he can use the following:

a. coping saw

b. hammer

c. file

d. sandpaper

e. paint

2. As a result of this project the student will be able to glue three pieces of fibrous material.

3. Upon completion of this project the student will be able trace a template.

Remedial Objectives:

1. As a result of this project the student will be developing his creativity by deciding on his own just how the boat will look.

2. Again in this experience the students eye-hand coordination will continue to improve with the continuing involvment of tools and materials.

3. As a result of this project the student will become sensitive to the hardships of others as he watches them try to complete their boats.

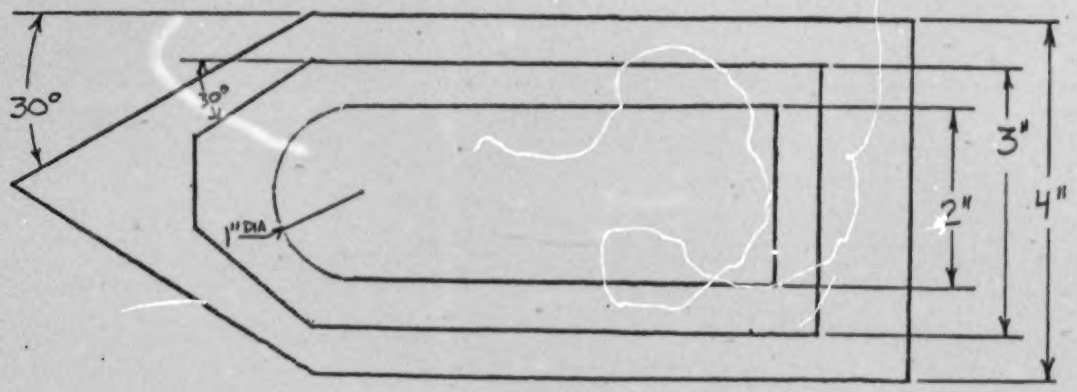
4. By discussing with the instructor the student will learn to react to another's sorrows and hardships and deal with his in a more accepted manner.

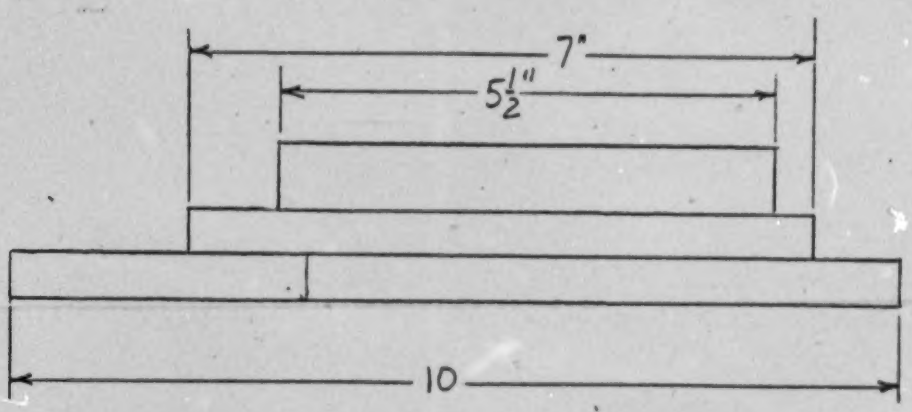
5. As a result of this project the student will be developing his sensory-motor skill of form discrimination by choosing just how his boat will be constructed.

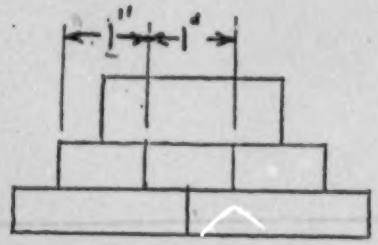
6. As a result of this project the student will be allowed to express himself and gain a feeling of pride that what he has completed is his own creation.

7. By continual praised from the instructor, the student will gain a feeling that they are not alone in this world, and that we are with them.

PROJECT #4







SCALE ½" = 1"

Project #5

Ruler

Description of Project:

The ruler is a project that is constructed from another ruler and requires direct transfering by the students. It is constructed from a piece of birch stripping 12" long. The main purpose is to introduce the student to measuring and transferring measurements to other projects.

Method of Assembly:

1..Obtain a piece of birch 1/8"x 1"x 12"

2. Clean all surfaces with sandpaper

3. Using a ruler measure and mark the birch strip at one half inch spaces.

4. Draw long line to represent the inch markings and number 1 thru 12.

5. Have students initial back of rulers

Tools and Materials Required:

1. Birch strip 1/8"x 1"x 12"

2. Sandpaper

3. Ruler

4. Pencil

5. Black marker

Preparation:

1. Make prototype

2. Set up work area

3. Precut birch strips

4. Develop introduction on measuring, and how to use the ruler.

Behavioral Objectives:

1. Upon completion of this project the student will be able to measure 12inches and in increments of one half inch.

2. As a result of this project the student will be able to transfer measurments from a ruler to another piece of material.

3. As a result of the measuring experience the student will demonstrate that he can successfully measure to within 1/16 of an inch.

4. By his successful transfer of lines the student will demonstrate that he can identify the various markings on the ruler.

Remedial Objectives:

1. As a result of this project the student is developing the following sensory-motor skills;

a. Visual discrimination

b. Number Sequence

c. Counting

d. Eye-hand coordination

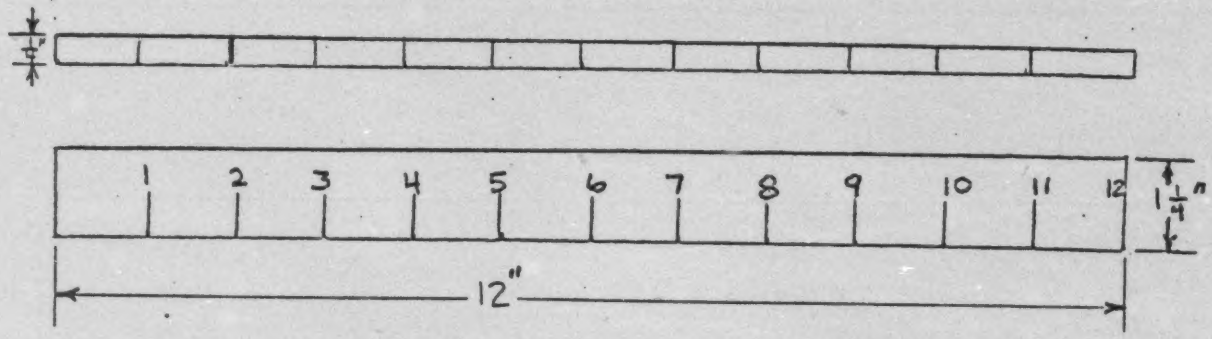
c. Thinking skills

2. As a result of this project the student will be developing the concept of the formation of numerials.

3. As a result of the completion of this project the student will developing his sensory-motor skill of following direction.

4. In this project the student's imagination will be stimulated by the instructors continuing praise and asking how he can utlize his new ruler.

PROJECT #5



SCALE $\frac{1}{2}$" = 1"

41 RULER 42

35.

Project #6

Airplane

Description of Project:

The airplane is a four piece project made from cypress and pine. The body is made from 3/4"thick pine, two inches in width, and six inches in length. The cockpit is also made from 3/4' pine, one inch in width, and three inches in length. The wing are made from cypress $\frac{1}{4}$"in thickness, two and one-half to three inches in width, and twelve and one-half to four inches in length. The main purpose of this project is to evaluate the progress of the students in their use of the coping saw, sandpaper, hammer, and brads.

Method of Assembly:

1. Using the templates trace out the four required pieces necessary to complete the airplane.
2. With a C-clamp and coping saw cut pieces to sizes
3. Sand all surfaces
4. Using hammer and brads fasten pieces together
5. If desired, paint

Tools and Materials Required:

1. Four templates (body, cockpit, main wing, tail wing)
2. C-clamp
3. Coping saw
4. Pencil
5. Sandpaper
6. File
7. Hammer
8. 3/4" Brads

9. Two pieces cypress (¼"x 3"x 14" and ¼"x 3"x 4½")

10. Two pieces of pine (3/4"x 2"x 7" and 3/4"x 1"x 3¼")

Preparation:

1. Construct prototype

2. Make templates

3. Pre-cut materials

4. Set up work benches

5. Introduction of project, and review of tools

Behavorial Objectives:

1. As a result of this project the student will be able to correctly identify a coping saw, a hammer, and 3/4" brads when asked to do so.

2. As a result of the students continuing use of the C-clamp, the student, without the teachers aid, will successfully clamp his materials to the work bench.

3. As a result of this project the will be able to choose between two different types of abrassive paper and use them in the proper order.

Remedial Objectives:

1. Through the instructors continuing use of positive reinforcement, helpful praise, and encouragement the student will develop a positive self-image.

2. As a result of this project the instructors will be able to identify which students are having acute or chronic problems with their understanding assigned lessons and can be assisted one-to-one. Those students with incomplete projects will be the students who need this assistance.

3. Completion of this project will increase the eye-

hand coordination of the student. Because it requires the student to manipulate tools and materials.

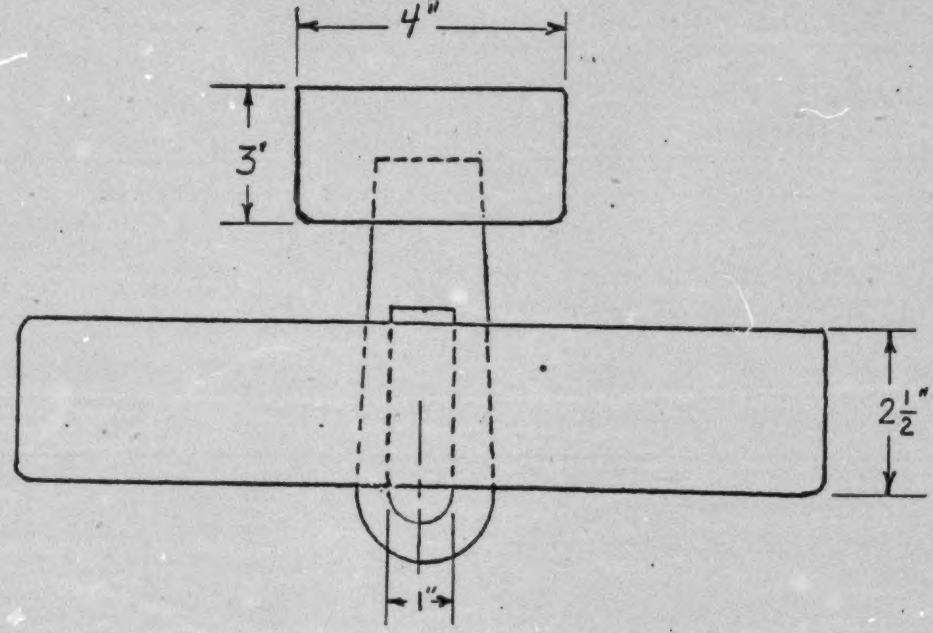
4. As a end product of this project the students will develop their sensory-motor skill of following directions. When instructed on how to construct the airplane the student will do so.

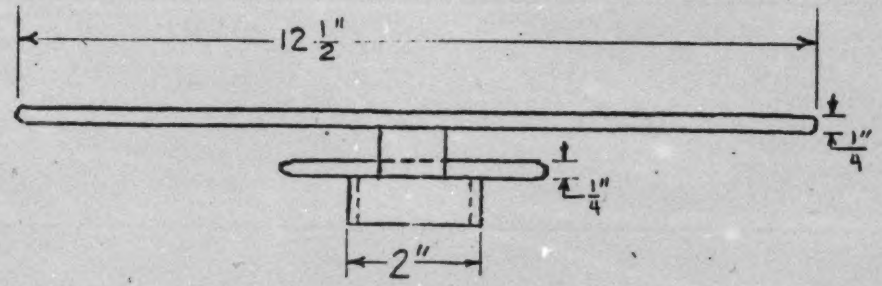
5. As the student is working on this project the instructor will discuss with the student what he is doing. By doing so the student will be developing his verbal expression and thinking skills.

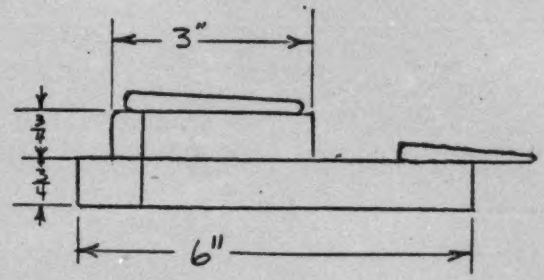
6. As the student touches material and is touched by the instructor tactile descrimination and perception are being developed by this project.

7. As a result of having to shape the project and form together the four pieces of material the student will develop, sensory-motor skills of form discrimination and part-whole relationships.

PROJECT #6







SCALE ⅜" = 1"

Project #7

Pencil Holder

Description of Project:

The pencil holder is constrcuted from a 4"x 6" piece of pine ½" thick and a piece of 3/4" dowel drilled out on center to hold a pen or pencil. The purpose of this project is to offer the students a successful experience that will continue to expand their knowledge of Industrial Arts and aid in their development as students.

Method of Assembly:

1. The student will first trace the base using a template
2. Next using a coping saw cut out base
3. With file, rasp, and/or sandpaper smooth base
4. Using a jig the next step is to cut an angle onto the dowel.
5. After the dowel has been angled a hole must be drilled in the center of the dowel to allow for the pencil.
6. Surfaces must smoothed on dowel with sandpaper
7. Using glue, brads and a hammer attach the dowel to the base plate.
8. Finally, if desired by student, finish all surfaces with any available and suitable finish.

Tools and Materials Required:

1. Template
2. Pencil
3. File, rasp, and sandpaper
4. Jig for dowel
5. Coping saw

6. One piece of pine ½"x 4"x 6"

7. One dowel 3/4" diameter 4"long

8. Bit brace

9. Drill bit

10. Hammer and Brads 3/4"

11. Glue

12. Finishing material (paint, stain, varnish)

13. C-clamp, portable vise

Preparation:

1. Develop template

2. Construct Jig

3. Make prototype

4. Set up work stations

5. Introduce to students Jig, explain jig, introduction of project.

Behavioral Objectives:

1. Upon completion of this project the student will be able to use a jig and when asked what a jig is will be able to describe one.

2. As a result of this project the student will be able to drill a hole in a dowel using a bit brace and auger bit.

3. The student will demonstrate that he can correctly manipulate a hammer and brad by successfully fastening the dowel to the base of the pencil holder.

4. As a result of this project the student will be able to trace on a piece of pine a template of a pencil holder.

Remedial Objectives:

1. The student will be developing by the use of the various tools the sensory-motor skill of eye-hand coordination.

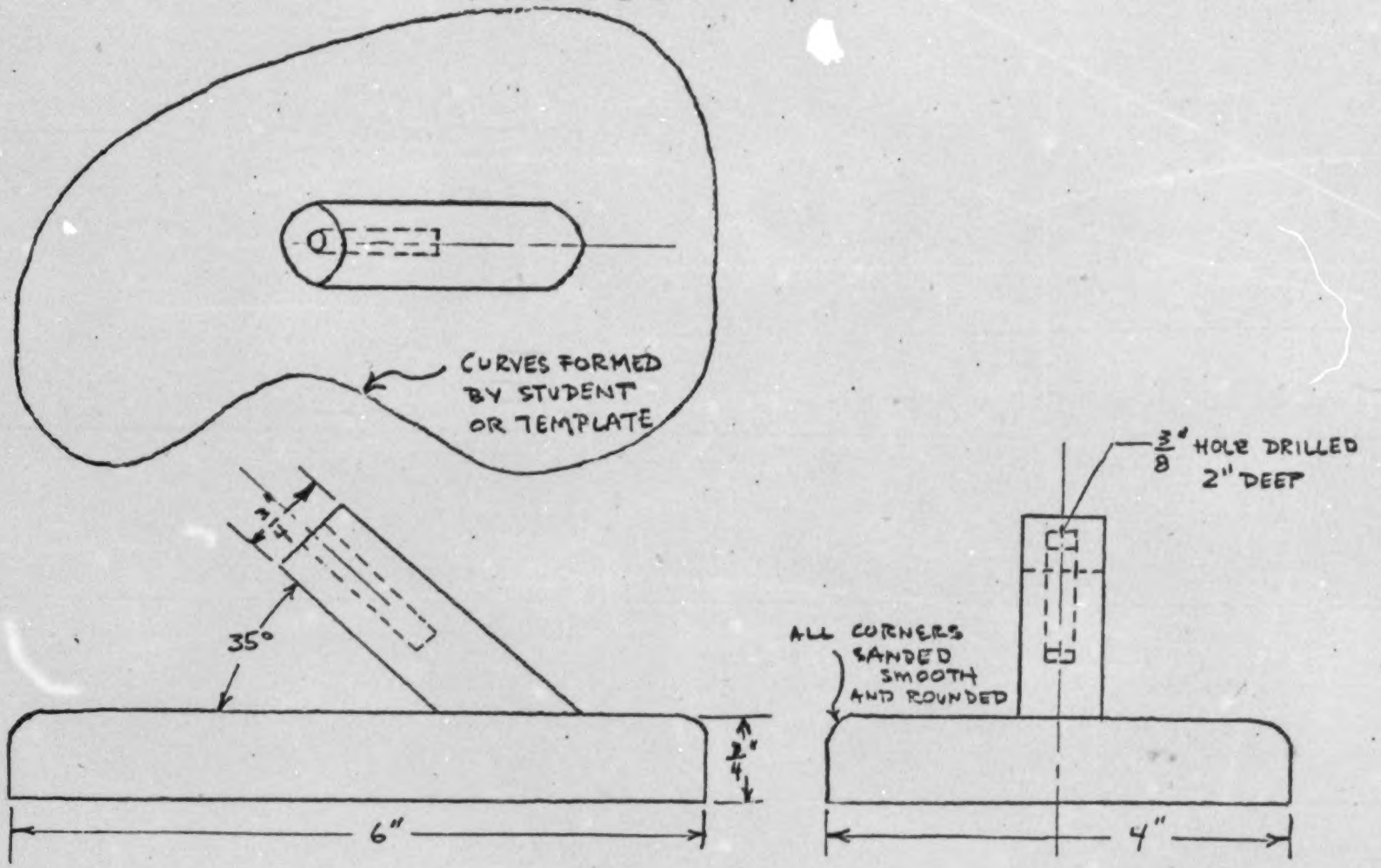
2. As a result of this project the student-teacher interaction will result in the child gaining a feeling of warmth and love. The teacher will utilize positive reinforcement and patience to achieve this.

3. As a result of this project being completed and student being allowed to bring it home with him this project is succeeding in involving the parents in the student's learning experience. Once home the parent will praise and encourage the student to continue to succeed thereby increasing the childs self-esteem.

4. As a result of the template and thickness of the material used this project is featuring successful methods, by minimizing error and maximizing immediate feedback.

5. As a result of the total group experience involved in this project the student will be able to foster constructive interpersonal relatioships.

PROJECT #7



SCALE $\frac{3}{4}$" = 1"

51 PENCIL HOLDER 52

Project #8

Game, Stacking Blocks

Description of Project:

The stacking block game is made from pieces of material that the students select and shape, and then place upon a stand in a pyramid manner. This project is designed to get the students to think and use the skills they have learned to create a game they can play. They are required to build the stand with a dowel as the center post, create the different shapes, and drill holes in the centers to allow the shapes to be stacked on the stand.

Method of Assembly:

1. Locate base, and ¼" dowel
2. Drill ¼" hole through the center of base and glue dowel into place.
3. Smooth all surfaces
4. Locate material to construct blocks
5. Using coping saw form desired shapes
6. Smooth all blocks
7. Drill ½" holes in centers of stacking blocks
8. Check for clean surfaces
9. Finish, if student desires

Tools and Materials Required:

1. One piece of material 4x4 to construct base
2. One ¼" diameter dowel four inches long
3. Four or five pieces of material that students can shape
4. Bit brace

5. Auger bits

6. Sandpaper, file, and/or rasp

7. C-clamp

8. Coping saw

9. Glue

10. Paint

Preparation:

1. Corstruct prototype

2. Assemble materials

3. Set up work benches

4. Introduction of project, discuss creativity and use of imagination

5. Introduce possible shapes (circle, triangle, square, rectangle, pentagon,)

Behavioral Objectives:

1. Given an assignment the students will demonstrate that they can follow directions by completing the assignment.

2. Given the bit brace the student will demonstrate that he can manipulate it in such a manner so a bit will be placed in it and locked for successful usage.

3. Upon completion of this project the student will be able to identify correctly the following tools, a coping saw, an auger bit, a bit brace and a C-clamp and when asked to do so will identify each properly.

Remedial Objectives:

1. Through the instructors verbal instructions on creativity and designing their own shapes the student will be developing the following sensory-motor skills:

a. visual memory (remembering shapes)

b. following directions (working on project)

c. auditory discrimination (verbal expression as to needs)

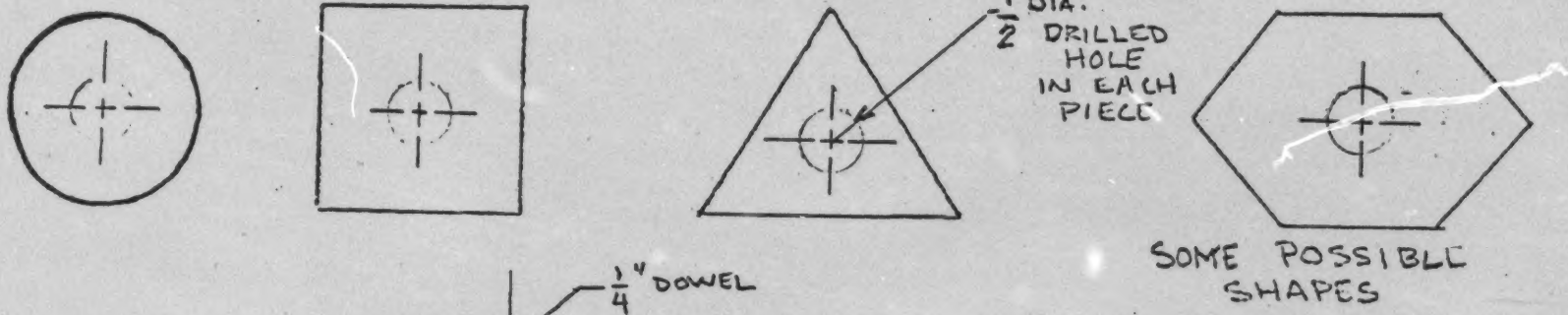
d. eye-hand coordination (working with tools)

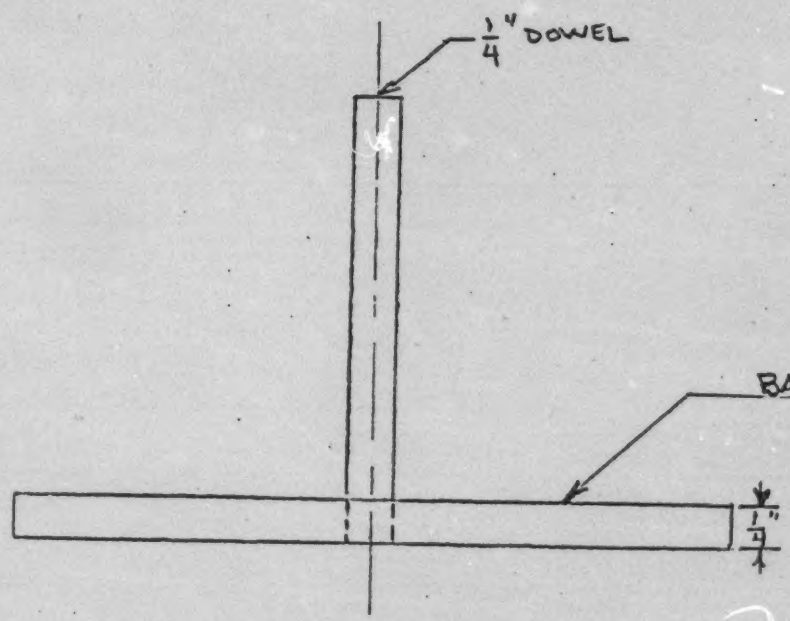
2. As a result of this project the student will gain more confidence in himself an aid in positive approach to his next task.

3. In making this project the student will develop both his thinking skills and his imagination by having to make his own discission as to sizes and shapes.

4. As a result of this project the student will be developing his sequential memory by having to place the larger blocks down before the smaller ones.

PROJECT #8





GAME, STACKING BLOCKS, CREATIVITY

Project #9

Foot Stool

Description of Project:

The foot stool is made from ½"x4"x12"pine, 3/4"x 1½"x7"pine and pre-fabbed legs of pine. It stands approximately five inches in height and is fastened together with screws. The main purpose of this project is to introduce the students to fastening through the use of screws.

Method of Assembly:

1. Locate materials (two top pieces, two braces, four legs)
2. Glue two top pieces together
3. With sandpaper smooth top removing all traces of glue
4. Through brace drill two holes,one at each end centered and one and one-quarter inches from each end.
5. Countersink holes on the brace
6. Using flat head screws attach braces to legs
7. Next, position brace on bottom side of top piece, one-half inch from sides, one and one-half inches from end.
8. Using two brads tack brace into place.
9. Drill into brace piece four holes
10. Countersink each hole
11. Screw into place each screw
12. Recheck to make sure all surfaces are sanded smooth.
13. Bring to IA instructor for inspection.
14. Paint if desired

Tools and Materials Required:

1. Two pieces of pine ½"x 4"x 12"

2. Four legs 4"high pre-cut

3. Two braces 3/4"x 1½"x7"

4. Glue

5. C-clamps

6. Portable vise

7. Sandpaper, file

8. Twist drill

9. Drill bits

10. Countersink

11. 12 screws

12. Screwdriver

13. Hammer

14. Brads 1"

15. Paint

Preparation:

1. Pre-cut pieces ½"x4"x12" pine, 3/4"x1½"x7"pine braces, and if pre-fabbed legs are not available pre-cut 1"x1"x4".

2. Make a prototype

3. Set up work benches

4. Introduction of screwing, the screwdriver, the twist drill, and countersink.

5. Peview inspection station relating to Industry.

Behavioral Objectives:

1. Upon completion of this project the student will have worked with a screwdriver and screws and when asked to identify each will do so correctly.

2. Given a lesson on the inspection station, its location, and function the students will,when they reach that stage

of construction, bring their project to the station for inspection and approval.

3. Upon completion of this project the students will be able to identify correctly a twist drill, drill bits for the twist drill, and a countersink.

4. As a result of this project the student will be able to successfully drill twelve holes in his project and screw in twelve screws.

5. As a result of this project the student will be able to glue two pieces of fibrous material together with little or no guidence from an instructor.

Remedial Objectives:

1. As a result of this project the student will be developing his sensory-motor skill of following directions. This will be demonstrated by his successful completion of the project and his ability to seek out the inspection station.

2. As a result of having to use tweleve screws and of having to get them from a box of more then twelve screws the student will be developing his counting and numbering sequence.

3. As a result of having to correctly position the angle of the legs the student will develop the sensory-motor skill of form discrimination.

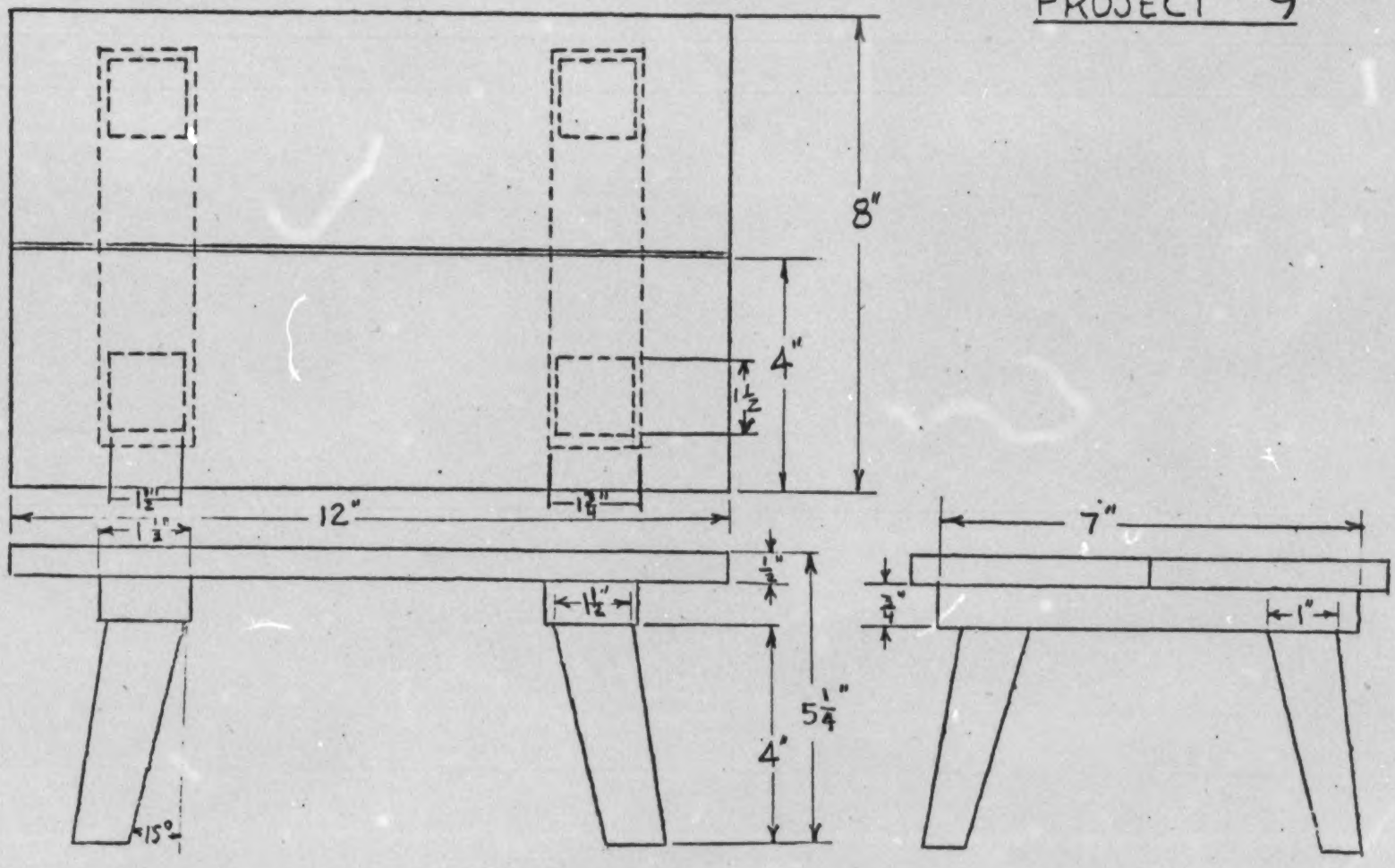
4. By bring the student to an inspection station and having him verbally express what he feels could increase the apperance of his project the student will be developing his verbal expression and thinking skills.

5. As a result of introducing new words to the student this project is aiding in the increasing of the students vocabulary.

6. The student will gain a greater feeling of self-esteem from this project as the instructor offers praise and continual positive reinforcement to the student as he is working on this project.

7. As a result of continuing encougagement by the instructor the student will gain a feeling of pride in his accomplishment when he completes this project.

PROJECT #9



SCALE $\frac{3}{8}$" = 1"

62 FOOT STOOL

63

Project #10

Wooden Sandals

Description of Project:

The sandals are constructed from one-half inch pine. They are shaped individually to the size of each students foot. This is achieved by each student tracing his foot on a oversized piece of stock. Once the tracing his foot on a oversized piece of stock. Once the tracing is complete the students cut out their sandals and smooth the surfaces. Leather or cloth materials are used for the straps and are fastened using small tacks. The main purpose of this project is to introduce the student to the use of leather or cloth material with wood materials.

Method of Assembly:

1. Students trace feet onto pieces of ½" pine
2. Cut out pattern of feet
3. File angle onto toe of sandals
4. Notch heal
5. File taper
6. Cut strips of leather or cloth
7. Measure strips so as to fit student firmly (tack one side and have student place foot on sandal, instructor can then measure the span and mark.)
8. Tack material to sandal
9. Sand all surfaces prior to tacking material
10. Check to make sure all surfaces are smooth
11. Student must pass through inspection station

Tools and Materials Required: 64

1. ½" pieces of pine larger enough to fit students feet
2. Leather or cloth material
3. Tacks, six per sandal
4. Hammer
5. Sandpaper
6. File
7. Coping saw
8. Portable vise
9. C-clamp
10. Pencil

Preparation:

1. Pre-cut material into 4"x 10" pieces
2. Make prototype
3. Set up work benches
4. Introduction of project, explaination of dircetions

Behavorial Objectives:

1. As a result of the student using leather upon completion of this project the student will be able to correctly identify a piece of leather when he sees it.

2. Upon completion of this project the student will have demonstrsted thst he can successfully manipulate a hammer and tack twelve tacks through material into a piece of pine.

3. As a result of this project the student will be able to trace both feet and cut with a coping saw the pattern from a ½"piece of pine.

Remedial Objectives:

1. As a result of the student and instructor having to

work as a team to successfully complete this project the student will be developing his skill to socially interact with another individual.

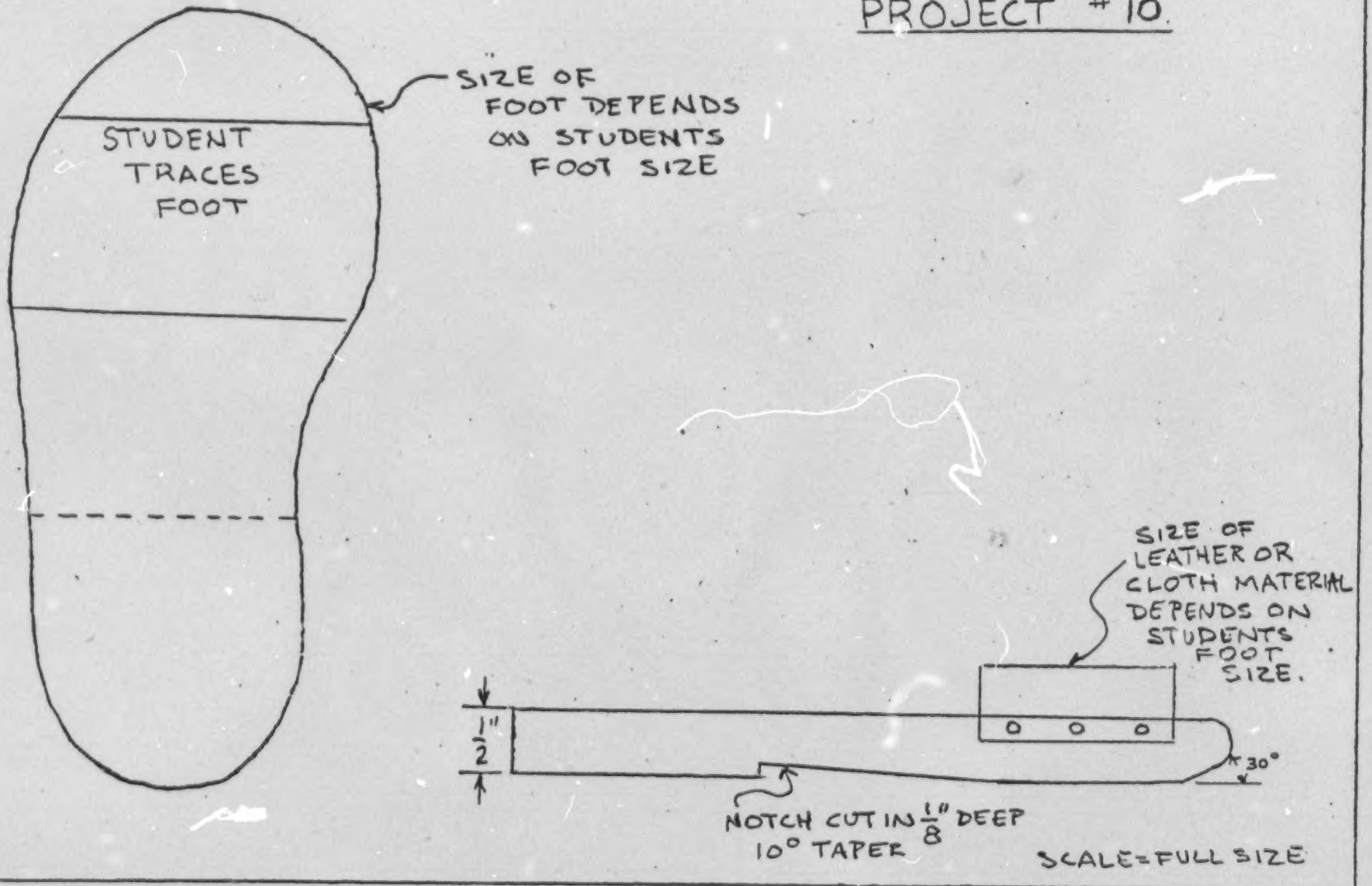
2. This project requires the student to manipulate various tools and materials and therefore will develop the students sensory-motor skill of eye-hand coordination.

3. As a result of this project the student will be developing his counting and numbering skills as he will have to take twelve tacks from a box of many.

4. The student, as a result of this project, will gain a feeling of pride from the positive reinforcement and encouragement the instructor gives as the student completes this task.

5. The student will be developing the sensory-motor skills of form discrimination and visual discrimination by having to successfully pass his project through an inspection station. The sandals must be properly shaped and all surfaces must be clean before the sandals will pass the inspection.

PROJECT #10.


SIZE OF FOOT DEPENDS ON STUDENTS FOOT SIZE
STUDENT TRACES FOOT
SIZE OF LEATHER OR CLOTH MATERIAL DEPENDS ON STUDENTS FOOT SIZE.
1/2"
30°
NOTCH CUT IN 1/8" DEEP
10° TAPER
SCALE=FULL SIZE

Project #11

Planter

Description of Project:

The planter is made from pine and cypress materials and is constructed to stand on a flat surface. The planter will hold a circular pot 4"in diameter. It stands 8" in height and is 6½" square. The purpose of this project is to have the student continue to develop his skills in Industrial Arts and also relate them to his classroom work. Springtime is the best time to have the students do this project.

Method of Assembly:

1. The student should first obtain twelve pieces of cypress and round the edges using a coping saw.
2. Four pieces must be cut to 6" lengths with a crosscut saw
3. Next sand all pieces of cypress and file rough edges if needed.
4. Attach each piece of cypress to top and base pieces
5. Check to make sure planter stands firmly, if needed level piece.
6. Apply finish coat or leave natural

Tools and Materials Required:

1. Two 3/4"x 6"x 6" pieces of pine
2. Twelve ¼"x 1 3/4"x 8" pieces of cypress
3. Brads
4. Hammer
5. Sandpaper
6. C-clamps
7. Portable bench vise

8. File, ruler, and square

9. Finishing solution (sealer, varnish, paint)

Preparation:

1. Template to allow students to trace round edges on top of cypress pieces.

2. Construct prototype

3. Pre-cut 4" diameter in top piece

4. Pre-cut all required materials that will be needed (cypress strips, top, and bottom)

5. Set up work stations

6. Introduction of project, template, and construction methods.

Behavioral Objectives:

1. As a result of this project the student will be able to position a template and transfer the shape to another piece of material using a pencil.

2. Upon completion of this project the student will have learned what a crosscut saw is and when asked to identify a crosscut saw will do so correctly.

3. Upon completion of this project the student will be able to use a crosscut saw. This will be demonstrated by the successful cutting off of two inches of material from four pieces of cypress.

4. As a result of having to measure and mark the strips of cypress with a ruler and square the student will demonstrate that he can identify both. This will be accomplished by asking the student to go to the tool cabinet and bring back the ruler and square.

Remedial Objectives:

1. As a result of adding new tools to the students ever growing list of tools this project is developing the students vocabulary. The new words are crosscut saw, rip saw, and square.

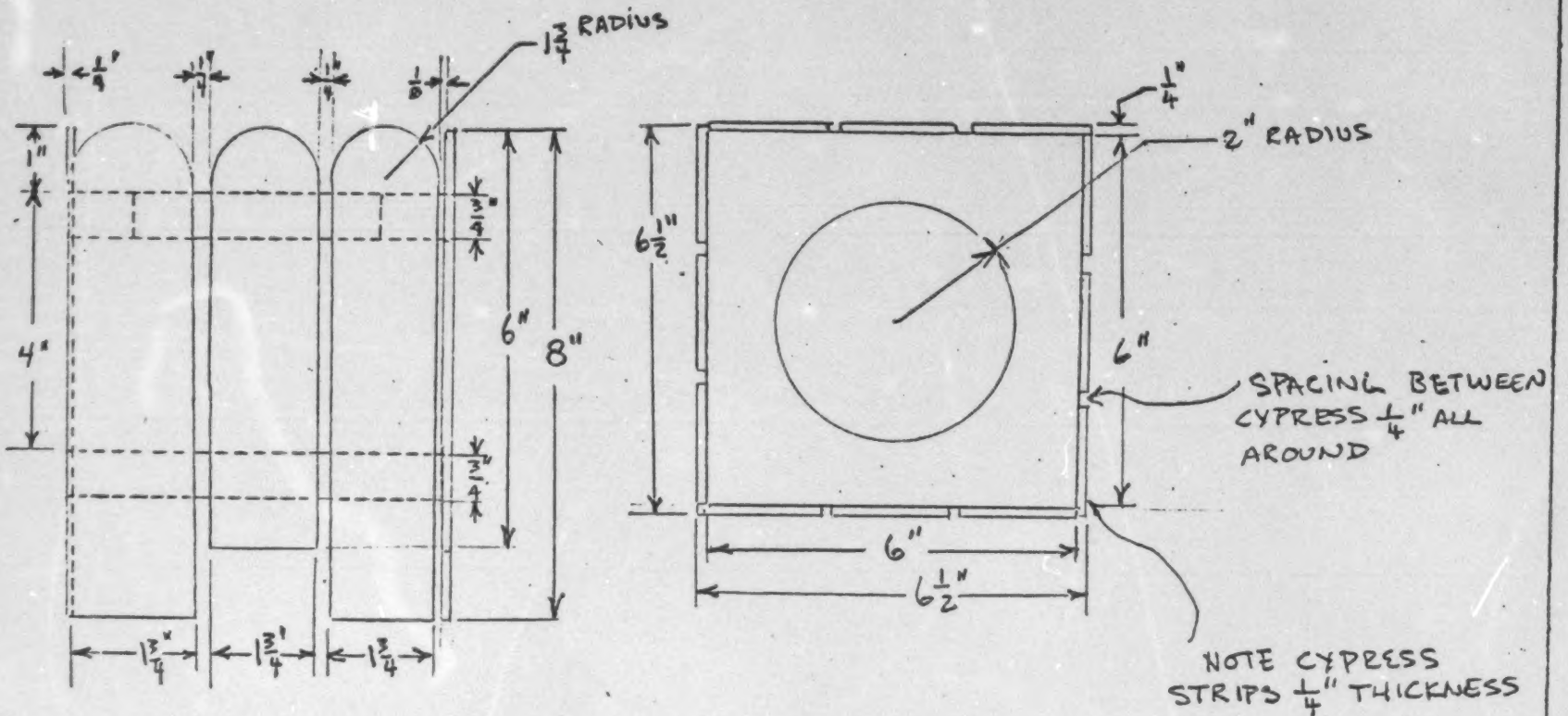
2. As a result of this project the student will be developing the sensory-motor skill of eye-hand coordination as he must manipulate tools to achieve a completed project.

3. The students visual memory will be stimulated by this project as the student thinks about how he will use this planter to put his plant in.

4. This project will develop the students verbal expression as he explains to the instructor how he will use this planter.

5. As a result of this project the instructor can develop a sense of caring in the student by explaining that this planter will be the home for the students plant and he can build that home for the plant. Relationships to love, caring, tenderness, and compassion can be discussed between the two as they work on this project.

PROJECT #11



SCALE ⅜" = 1"

72 PLANTER

73

Tool and Supply List

Based on ten students.

The prices are based on 1975-1976 catalog prices.

on hand	additional needed	Description	unit cost	total cost
8	2	Stanley Wood Working Vise #80-702	$7.05	$70.50
5	5	Standard C-Clamps #540	$4.30	$43.00
3	-	Block Planes	$8.22	$24.66
6	4	Coping Saws	$1.40	$14.00
*1-	*1	Coping Saw Blades (100 to a pkg.)	$8.50	$17.00
2	-	Crosscut Saws 22" 10point	$8.90	$17.80
4	2	Stanley 7oz. Hammer	$4.75	$27.50
4	-	Stanley 10oz. Hammer	$4.75	$18.00
2	-	Hand Drills #514	$3.31	$ 6.62
3	-	Twist Drills Size 1/8	.40	$ 1.20
3.	-	Twist Drills Size 3/16	.65	$ 1.95
3	-	Twist Drills Size 1/4	.95	$ 2.85
3	1	Stanley Bit Brace	$7.75	$31.00
1	1	Irwin Auger Bit Set D-13	$21.35	$42.70
6	-	Tri-square	$3.40	$20.40
1	-	Countersink #137	$1.18	$ 1.18
1	-	Flat Wood File 10"	$1.40	$ 1.40
1	2	Half-Round Wood File 10"	$2.20	$ 6.60
1	2	Half-Round Cabinet Rasp 10" smooth	$4.85	$13.55
1	-	Half-Round Cabinet Wood File 10"	$3.40	$ 3.40
4	4	File Handles	.85	$ 6.80

Total Tools and Equipment = $372.11

74

SUPPLY LIST

The only consumable item desperately in need at Wells Street School is lumber. Items such as nails, sand paper, and glue do not have to be reordered for the next year.

NEEDED;

60 board feet ½ inch clear or #2 pine
2 sheets 4'X8" masonite ¼"
1 sheet 4'X8' plywood ½"
1 sheet 4'X8" plywood ½"
20 cans spray paint (lead free)
2 gallons paint thinner

CRITIQUE

The ten children at Wells Street School are preparing to enter their regular classrooms. The instructors who will recieve them have participated in the rehabilitation program and hopefully will implement some teaching techniques they have observed at Wells Street. The children have shown a marked improvment since their arrival in September 1975. They have worked hard to overcome their handicaps and improve their school work.

Early diagnosis is an important aspect of any rehabilitation program. If instructors can identify problems in children when they are young, in all areas of study, then the child can be rehabilitated and be back in the classroom in a short period of time. A small scale industrial arts program is definetly a worth while venture in an elementary school special education curriculum. A well planned, well organized course in industrial arts can offer students many rehabilitative exercises through participation alone. The child uses tools and materials in a construction process. The child must converse with the instructor to find out how to build a particular project. He must follow a sequence of events for the completion of the project. He must use his eyes and hands to coordinate actions to use tools properly. He must use his brain as well as his hands and follow directions for the proper sequence of construction. The student should

be encouraged to explore and create differences in the original design of a project and express his ideas through changes or additions. (with permission and an adequate description or drawing). The student does become excited for his own progress. He can see, feel, and touch something he has built by himself and he is proud of the fact he has accomplished a very difficult task. A child's emotional stability depends on such progress so he can grow and build a normal future education.

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CE 008 409